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Response and Amendment

Patent Application
Attorney Docket No.: STI-PAUS0001

REMARKS

Applicant thanks the Examiner for once again acknowledging and approving the drawings filed on March 19, 2004.

Applicant thanks the Examiner for the citations of additional references listed by the Examiner on form PTO-892.

Applicant thanks the Examiner for the in person Examiner Interview with the undersigned on March 30, 2007. A copy of the Interview Summary is included herewith. During the Interview the 35 USC § 112 rejections were discussed and agreement was reached to amend the claims so that the cryocooled temperature would be recited as "an HTS operating temperature" that is supported by the specification, and to amend claim 46 to be like claim 45 so as to include a process step. The amendments herein reflect these agreed upon changes. The undersigned also pointed out that he believed the finality of the Office Action was improper because the limitation of original claims 31-41 were not shown in the originally applied reference, Hershtig, and this should have resulted in the Examiner looking for and finding the Kingswood reference. Also, the Kingswood and Hershtig references are both classified in the same class and subclass, 455/561. In response, the Examiner suggested that we focus on coming to agreement of amendments to obtain patentable claim language. Further, independent claims 1, 18, 31, 42 and 44, as well as some of the dependent claims were discussed in detail along with the teachings of Kingswood and Hershtig, as well as systems related to portable base stations that the Examiner was familiar with. The undersigned and the Examiner came to agreement that the claims would be patentable over all the cited and applied art as well as the portable base stations art that the Examiner was familiar with, by amending the independent

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claims to include various limitations from the dependent claims. Per the Interview discussion, the undersigned prepared a draft of the proposed claim amendments and faxed them to the Examiner on April 17, 2007. The Examiner reviewed the proposed claim amendments and gave his verbal approval on April 20, 2007. This Response and Amendment completely reflect the claims as agreed upon by the Examiner on April 20, 2007. Applicant hereby thanks the Examiner for his cooperation and assistance in the Interview process and review and approval of the proposed claim amendments. Thank you.

Applicant notes for the record that they believe the finality of the presently pending Office Action to be improper for the reasons indicated above. However, Applicant has not petitioned this issue because the Examiner agreed to claim amendments that would make the claims acceptable to him and patentable, placing the present application in condition for allowance.

Claims 1 – 14 and 18-47 are pending and were examined. Claims 15-17 were previously cancelled. By this amendment, Applicant has amended claims 1, 3, 12, 14, 18, 25, 30, 31, 38, 42, and 44-46, to more clearly claim the invention of the subject application. Therefore, Applicant respectfully request examination of presently pending claims 1-14 and 18-47.

In Item 3 of the final Office Action, the Examiner rejected claims 3-5, 12, 25-26, 29, and 30, under 35 USC § 112, first paragraph, as failing to meet the written description requirement. This rejection is respectfully traversed. As mentioned above, claims 3, 12, 25, 29 and 38 have been amended to replace the language “cooled to a temperature equal to or below the maximum upper limit for high temperature superconductors” with “an

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HTS operating temperature" which is supported by the written description of the invention. As noted during the Examiner Interview, it is implicit in the disclosure of the present invention that the cryo-cooling system operates at an HTS operating temperature. Further, the present invention incorporates by reference USPN 6,424,846 that discloses an HTS operating temperature of 77 degrees K. Therefore, based upon the aforementioned and agreement with the Examiner, the Examiner's rejection of claims 3-5, 12, 25-26, 29, and 30, under 35 USC § 112, first paragraph, has been overcome.

In Item 4 of the final Office Action, the Examiner rejected claim 46 under 35 USC § 112, second paragraph, as being indefinite because it was a method or process claim that failed to set out any process steps. This rejection is respectfully traversed. As mentioned above agreement was reached during the Examiner Interview that claim 46 would be amended to be similar to claim 45 to include limitations that are process steps. Applicant has amended claim 46 so that each component is added to the cryo-cooled system module by use of a process step. Therefore, based on the aforementioned and the Examiner's agreement, the Examiner's rejection of claim 46 under 35 USC § 112, second paragraph, is overcome.

In Item 5 of the final Office Action, the Examiner rejected claims 1-2, 18, 31, 40-45 and 47 under 35 USC § 103(a) as being unpatentable over Kingswood et al. (USPN 6,584,303). This rejection is respectfully traversed. As noted above, claims 1, 18, 31, 42, 44 and 45 have been amended. Further, all of independent claims 1, 18, 31, 42, and 44 have been amended to include limitation from the dependent claims which the Examiner agrees to be patentable. Therefore, for these and the following reasons Applicant respectfully submits that claims 1-2, 18, 31, 40-45 and 47 are patentable over Kingswood.

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Applicant respectfully requests reconsideration and thanks the Examiner for his agreement that these claims as amended above are now patentable for the reasons of adding limitations from claims 3 and 14 into claim 1, adding limitations from claims 25 and 30 into claim 18, adding limitations from claim 38 into claim 31, and adding language related to the housing sizing to claims 42 and 44.

With respect to independent claims 1, 18, 31 and 42, the Examiner relied upon Official Notice for placing the components in a housing, stating that Kingswood did not explicitly disclose a housing. This rejection is respectfully traversed. During the Examiner Interview the undersigned pointed out the need for a reference showing why it would be obvious for one skilled in the art to include a housing to protect the components, and indicated that typically a build was used to place the rack type systems in that are described in Kingswood. Rather than provide a reference showing such a housing, the Examiner noted that one skilled in the art would be familiar with portable base station units and that a rack such as that shown in Kingswood would be placed by one skilled in the art into a mobile base station trailer or container. The undersigned has not personal knowledge or proof of this statement, but has accepted it only for argument sake and has agreeing to amend the claims as requested by the Examiner to include limitations from the dependent claims so as to result in patentable subject matter.

In general, Kingswood is directed to a method and apparatus for automatically identifying a function module in a modular transceiver system and discloses only a rack 11 including a plurality of modules, e.g., TRX1 and TRX2, such that a module, e.g., TRX1 may be removed and replace with a module of a different function, e.g., a booster module 12. The TRX1 and booster module 12 are the same size and thus fit into

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the same size slot. The slot size is fixed and will accommodate only the size of components having a size of the original modules, e.g., TRX1 and TRX2. Kingswood also fails to indicate that there is an excess amount of space in the original rack system or any indication that a housing would be used have excessive capacity for including more and/or larger area of components. Finally, Kingswood, like Hershtig (previously cited) does not disclose the use of HTS components or components for cooling to an HTS operating temperature.

On the hand, with respect to claim 1 of the present application, a receiver front end having a housing that is a single enclosure for housing the receiver front end components, wherein the housing has three dimensions of sufficient size to accommodate at least a portion of the first set of components and all of the additional components added that make up the second set of components, and wherein the second set of components includes one or more cryogenically cooled components that are cooled to an HTS operating temperature(s). These housing size and HTS aspects of the present invention are not disclosed, taught, or suggested by Kingswood, nor would one skilled in the art find them obvious based on Kingswood or based on the knowledge of one skilled in the art (e.g., portable base station). Therefore, the Examiner's rejection of claim 1 based on Kingswood has been overcome.

With respect to claim 2, claim 2 is dependent on claim 1 and is therefore patentable over Kingswood for at least the reasons that claim 1 is patentable over Kingswood.

With respect to claim 18 of the present application, a receiver including one or more high temperature superconductor components that is cooled to an HTS operating

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temperature(s), wherein the housing for the receiver front end is a single housing having at least three dimensions of sufficient size so as to contain at least a portion of the first component and one or more of the second component, and the base station is a component of a wireless communication system is recited. Again the HTS and housing size aspects of the present invention receiver are not disclosed, taught, or suggested by Kingswood, nor would one skilled in the art find them obvious base on Kingswood or based on the knowledge of one skilled in the art (e.g., portable base station). Therefore, the Examiner's rejection of claim 18 based on Kingswood has been overcome.

With respect to claim 31 of the present application, a receiver or transceiver front end including one or more high temperature superconductor components includes at least one high temperature superconductor filter cooled to an HTS operating temperature(s) and the single housing accommodates only the first set of components and the second set of components. Here again, the HTS and housing size aspects of the present invention receiver are not disclosed, taught, or suggested by Kingswood, nor would one skilled in the art find them obvious base on Kingswood or based on the knowledge of one skilled in the art (e.g., portable base station). Therefore, the Examiner's rejection of claim 31 based on Kingswood has been overcome.

With respect to claims 40 and 41, claims 40 and 41 are dependent on claim 31 and are therefore patentable over Kingswood for at least the reasons that claim 31 is patentable over Kingswood. Further, these claims are also patentable over Kingswood for the additional reason that Kingswood fails to disclose, teach or suggest limiting the size of the housing to be approximately equal to or greater than 8064 cubic inches or having two of the three dimensions equal to or greater than 24 inches. To the extent that

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the Examiner uses Official Notice by suggesting these are obvious design choices, this rejection is respectfully traversed. Applicant respectfully request the Examiner to come forward with a reference showing these limitations or to withdraw his rejection of claims 40 and 41.

With respect to claim 42 of the present application, method for upgrading a receiver or transceiver front end having a housing that is a single enclosure for housing the receiver front end components, wherein the housing has three dimensions of sufficient size to accommodate at least a portion of the first set of components and all of the additional components added that make up the second set of components included in the second complete receiver front end system, and wherein the second set of components includes one or more cryogenically cooled components that are cooled to an HTS operating temperature(s). These housing size and HTS aspects of the present invention are not disclosed, taught, or suggested by Kingswood, nor would one skilled in the art find them obvious base on Kingswood or based on the knowledge of one skilled in the art (e.g., portable base station). Therefore, the Examiner's rejection of claim 42 based on Kingswood has been overcome.

With respect to claim 43, claim 43 is dependent on claim 42 and is therefore patentable over Kingswood for at least the reasons that claim 42 is patentable over Kingswood.

With respect to claim 44 of the present application, method for upgrading a receiver or transceiver front end having an enlarged single housing for housing all of the other modules and having an excess area of sufficient size to house all upgrade components, the single housing having three dimensions of sufficient size to

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accommodate at least a portion of the plurality of function modules and all of the additional modules added for upgrading, the plurality of function modules including a duplexer module, an amplifier module including a non-cryocooled low noise amplifier, and a power supply module. These single housing, housing size and functional module aspects of the present invention are not disclosed, taught, or suggested by Kingswood, nor would one skilled in the art find them obvious base on Kingswood or based on the knowledge of one skilled in the art (e.g., portable base station). Therefore, the Examiner's rejection of claim 44 based on Kingswood has been overcome.

With respect to claim 45, claim 45 is dependent on claim 44 and are therefore patentable over Kingswood for at least the reasons that claim 44 is patentable over Kingswood. Further, this claim is also patentable over Kingswood for the additional reason that Kingswood fails to disclose, teach or suggest the additional steps of removing the power supply module, removing the amplifier module, and adding a cryo-cooled system module that cools to an HTS operating temperature(s), wherein at least a portion of the cryo-cooled module is housed within the enlarged housing. None of these steps or the inclusion of cooling to an HTS operating temperature(s) is disclosed, taught, or suggested by Kingswood. To the extent that the Examiner uses Official Notice by suggesting these steps are obvious routine functions to upgrading a system, this rejection is respectfully traversed. There is no showing or support anywhere for the proposition that removing particular components and adding HTS cooled components is obvious to one skilled in the art. Applicant respectfully request the Examiner to come forward with a reference showing these limitations or to withdraw his rejection of claim 45.